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EXAMINER

BERNS, DANIEL J

ART UNIT

PAPER NUMBER

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/593,986	<b>Applicant(s)</b> KLUGE ET AL.	
	<b>Examiner</b> DANIEL BERNS	<b>Art Unit</b> 1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 8/20/10.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5,8-10,13,15 and 16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5,8-10,13,15 and 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

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## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the 1<sup>st</sup>, 2<sup>nd</sup>, and 4<sup>th</sup> paragraphs of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Subject to the following paragraph, a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

2. Claims 8-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Said claims require the noble metals Pd and/or Rh. However, to the extent that said metals might be provided upon the second support material, they would be incompatible with claim 1, from which said claims depend, and rendered indefinite thereby: claim 1 does not allow for noble metals upon the second support material. For examination purposes, these claims will be interpreted as only calling for Pd and/or Rh upon the first support material.
3. Claims 1-5, 8-10, 13, 15 and 16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Claim 1 (as amended) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Claim 1's recitation that "(i) the first support material is separate from the second support material; (ii) the first support material contains the noble metal; and (iii) the second support material does not contain any noble metal" was stated to be

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supported within Table 3 and par. 5, 26, and 28 of applicant's PGPub (US 2009/0062117) (herein "117"). The closest support for the quoted passage is within par. 28 thereof.

However, par. 28 states that "platinum and the [NO<sub>x</sub>] storage component are deposited on different *portions* of the support material, i.e. to different *portions* of the Mg/Al mixed oxide doped with rare earth oxides." *See* '117 at par. 28 (emphasis added). The allegedly supporting passage makes no mention of the first and second support materials being separate from each other, but rather describes a unitary support material upon which Pt and the NO<sub>x</sub> storage component are deposited upon different sections thereof (i.e., the Pt and NO<sub>x</sub> storage component are not deposited directly on top of one another). Hence, the quoted passage within amended claim 1 is prohibited new matter and must be deleted or amended to be commensurate in scope with the original disclosure. *See* MPEP 706.03(o).

Since independent claim 1 is being rejected for deficiencies under 35 U.S.C. 112, 1st par., all claims directly or indirectly depending therefrom are likewise deficient and rejected under 35 U.S.C. 112, 1st par. as well. *See* 35 U.S.C. 112, 4th par.; MPEP 2164.08; *Nat'l Recovery Tech's, Inc. v. Magnetic Separation Sys., Inc.*, 49 USPQ2d 1671, 1677 (Fed. Cir. 1999).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. In considering the obviousness rejections below, the applicant should note that the person having ordinary skill in the art has the capability of understanding the scientific and engineering principles applicable to the claimed invention. The references of record in the application reasonably reflect this level of skill.

8. NOTE: Notwithstanding the above rejections under 35 U.S.C. 112, 1<sup>st</sup> par., the amended claims have been examined against the prior art as if no new matter had been claimed. *See* MPEP 2163.06 I. No waiver of rejections under sec. 112 should be inferred, however.

9. Claims 1-5 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruwisch et al., Pre-grant Pub. No. US 2003/0125202 (published 7/3/03) ("Ruwisch")<sup>1</sup> in view of Deebe et al., US 5,874,057 (1999) ("Deeba"). Regarding claim 1 as amended, Ruwisch teaches a nitrogen oxide ("NO<sub>x</sub>") storage catalyst comprising an Mg/Al mixed oxide support material doped with rare earth oxide and comprising a NO<sub>x</sub> storage component supported thereon, forming a NO<sub>x</sub> storage material. *See id.* at, e.g., par. 16, 38, 42-44, 46 and 48; Tables 2-3; Ex. 1-

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<sup>1</sup> Applicant should note that Ruwisch is within the same document/application family as EP 1317953, appearing in applicant's 9/25/06 Information Disclosure Statement. The citations to Ruwisch above should also be inferred to

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7. Ruwisch teaches that employing homogeneous Mg/Al oxide as a support for NO<sub>x</sub> storage materials such as BaO or SrO may "lead to a significant improvement of the NO<sub>x</sub> storage efficiency." *See* Ruwisch at par. 38. Given such a teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to select and employ homogeneous Mg/Al oxide as Ruwisch's NO<sub>x</sub> storage component (i.e., second support material).

Ruwisch also suggests a 1-30 wt. % MgO range within the NO<sub>x</sub> storage material's Mg/Al mixed oxide support as claimed. *See id.* at par. 16. Ruwisch's NO<sub>x</sub> storage catalyst further comprises a catalytically-active Pt noble metal-comprising coating upon an Mg/Al mixed oxide support material. *See id.* at par. 16, 43-44; Table 3; Ex. 1-7. A 1-40 wt. % MgO range within the catalytically-active Pt's Mg/Al mixed oxide support is likewise suggested by Ruwisch as claimed. *See id.* at par. 16. Ruwisch's catalyst is coated on an inert honeycomb made of ceramic or metal. *See id.* at par. 8 and 61; clm. 23.

Lastly, Ruwisch teaches that its noble metal component and NO<sub>x</sub> storage component are impregnated/disposed upon separate support materials/particles. *See id.* at, e.g., Table 3. While Table 3's examples mainly employ a Ce/Zr oxide as a support for its NO<sub>x</sub> storage component, given Ruwisch's teaching of the substitutability of Mg/Al oxide for Ce/Zr oxide, *see id.* at par. 48, such a substitution would have been obvious to one of ordinary skill in the art at the time the invention was made- selecting between two or more materials or processes is an obvious choice if their equivalence for the given purpose was known in the art when the invention was made. *See* MPEP 2144.06 II. Further, "[a]n express suggestion to substitute one equivalent component

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cite to the appropriate, corresponding passages in EP 1317953, although explicit citations thereto have been omitted for simplicity and to avoid confusion.

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or process for another is not necessary to render such substitution obvious." *Id.*, citing *In re Fout*, 675 F.2d 297, 213 USPQ 532 (CCPA 1982).

Regarding claim 2, Ruwisch teaches oxides, carbonates or hydroxides of Mg, Ca, Sr, Ba, the alkali metals, and/or mixtures thereof as suitable NO<sub>x</sub> storage components. *See id.* at par. 36-38 and 48; clm. 8.

Regarding claims 3 and 4, Ruwisch teaches oxides of Ce, Nd, Sm, La, Pr, and/or mixtures thereof as suitable rare earth oxides. *See id.* at par. 42 and 48; Table 3; Ex. 1-7.

Regarding claim 5, Ruwisch teaches the inclusion of ~0.5 to ~10 wt. % La<sub>2</sub>O<sub>3</sub> and/or Pr<sub>2</sub>O<sub>3</sub> within its NO<sub>x</sub> storage material's support composition. *See id.* at par. 49. While Ruwisch states that the La<sub>2</sub>O<sub>3</sub> and/or Pr<sub>2</sub>O<sub>3</sub> are doped upon a Ce/Zr mixed oxide support material, given Ruwisch's statement/suggestion of the interchangeability of Ce/Zr mixed oxides with Mg/Al mixed oxides as the NO<sub>x</sub> storage material's support (*see id.* at par. 48), one of ordinary skill in the art at the time of the invention could have reasonably concluded that the ~0.5 to ~10 wt. % La<sub>2</sub>O<sub>3</sub> and/or Pr<sub>2</sub>O<sub>3</sub> dopant would likewise have been appropriate for an Mg/Al mixed oxide serving as the NO<sub>x</sub> storage component's support. Additionally or alternatively, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply a ~0.5 to ~10 wt. % La<sub>2</sub>O<sub>3</sub> and/or Pr<sub>2</sub>O<sub>3</sub> dopant to an Mg/Al mixed oxide serving as the NO<sub>x</sub> storage component's support, given Ruwisch's statement/suggestion of the interchangeability of Ce/Zr mixed oxides with Mg/Al mixed oxides as the NO<sub>x</sub> storage material's support.

Regarding claim 8, Ruwisch teaches the optional presence of Pd along with the Pt coating previously discussed. *See id.* at par. 43-44; Table 3; Ex. 2 and 4-7.

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Regarding claims 9 and 10, Ruwisch teaches the optional presence of Rh-coated alumina within its NO<sub>x</sub> storage catalyst. *See id.* at par. 45; Table 3; Ex. 3-7.

10. Claims 1-5, 8-10, 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruwisch in view of Strehlau et al., US 6,350,421 (2002) (“Strehlau”). Regarding claims 1-5 and 8-10, Ruwisch’s teachings are as above. Regarding claims 13 and 15, the difference between the claims and Ruwisch is that the latter does not explicitly teach the presence of its NO<sub>x</sub> storage material in a 3-25 (as in claim 15) or 5-10 wt. % range (as in claim 13). These limitations, however, are taught by Strehlau.

Strehlau teaches a NO<sub>x</sub> storage catalyst comprising a K, Cs, Ba, Mg, Ca, or Sr oxide, carbonate, or hydroxide NO<sub>x</sub> storage material upon a rare earth metal-doped or bi-metallic support, similar to Ruwisch’s NO<sub>x</sub> storage catalyst. *See* Strehlau at col. 4, ln. 55 to col. 5, ln. 26. Strehlau teaches the desirability of employing a NO<sub>x</sub> storage material in amounts of 10-45 wt. % in relation to the NO<sub>x</sub> storage catalyst’s overall weight. *See id.* at col. 5, ln. 60-63. Given Strehlau’s statement of the effectiveness of employing 10-45 wt. % NO<sub>x</sub> storage material, and the fact that said range touches and/or overlaps those claimed, the latter are rendered *prima facie* obvious thereby as it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ such amounts of NO<sub>x</sub> storage material as taught by Strehlau within Ruwisch’s overall catalyst. *See, e.g., In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976) (holding that a *prima facie* case of obviousness exists where claimed ranges “overlap or lie inside ranges disclosed by the prior art”); MPEP § 2144.05.



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11. Claims 1-5, 8-10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruwisch<sup>2</sup> in view of Deebe et al., US 5,874,057 (1999) ("Deeba"). Alternatively regarding claim 1 as amended, Ruwisch teaches a nitrogen oxide ("NO<sub>x</sub>") storage catalyst comprising an Mg/Al mixed oxide support material doped with rare earth oxide and comprising a NO<sub>x</sub> storage component supported thereon, forming a NO<sub>x</sub> storage material. *See id.* at, e.g., par. 16, 38, 42-44, 46 and 48; Tables 2-3; Ex. 1-7. Ruwisch teaches that employing homogeneous Mg/Al oxide as a support for NO<sub>x</sub> storage materials such as BaO or SrO may "lead to a significant improvement of the NO<sub>x</sub> storage efficiency." *See* Ruwisch at par. 38. Given such a teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to select and employ homogeneous Mg/Al oxide as Ruwisch's NO<sub>x</sub> storage component (i.e., second support material).

A 1-30 wt. % MgO range within the NO<sub>x</sub> storage material's Mg/Al mixed oxide support is suggested by Ruwisch as claimed. *See id.* at par. 16. Ruwisch's NO<sub>x</sub> storage catalyst further comprises a catalytically-active Pt noble metal-comprising coating upon an Mg/Al mixed oxide support material. *See id.* at par. 16, 43-44; Table 3; Ex. 1-7. A 1-40 wt. % MgO range within the catalytically-active Pt's Mg/Al mixed oxide support is likewise suggested by Ruwisch as claimed. *See id.* at par. 16. Ruwisch's catalyst is coated on an inert honeycomb made of ceramic or metal. *See id.* at par. 8 and 61; clm. 23. Should it be argued that Ruwisch differs from amended claim 1 in that Ruwisch does not explicitly appear to teach that first and second support materials, separate from each other, wherein only the first support material contains the noble metal, these limitations are taught by Deebe.

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<sup>2</sup> *See* fn. 1, above.

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Deeba teaches a catalyst composition comprising i) a Pt catalytic component and ii) a NO<sub>x</sub> sorbent (i.e., storage) material supported upon an appropriate oxidic support material, wherein i) and ii) are segregated from each other by not being dispersed on the same increment of support material. *See* Deeba at col. 2, ln. 66 to col. 3, ln. 35 and col. 5, ln. 14-24. Deeba further teaches that its Pt catalytic component may comprise additional Pt-group metals, and that its NO<sub>x</sub> sorbent material may further comprise rare earth oxides such as ceria. *See id.* at col. 3, ln. 36-44. Deeba teaches that segregating components i) and ii) as detailed above yields “an exceedingly effective and durable composition for the abatement of NO<sub>x</sub> in a gas stream[.]” *See id.* at col. 6, ln. 18-41. Given such an advantageous result, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ruwisch’s catalyst by deploying its catalytic Pt component and NO<sub>x</sub> storage component upon separate support particles to segregate the components as taught by Deeba.

Regarding claim 2, Ruwisch teaches oxides, carbonates or hydroxides of Mg, Ca, Sr, Ba, the alkali metals, and/or mixtures thereof as suitable NO<sub>x</sub> storage components. *See id.* at par. 36-38 and 48; clm. 8.

Regarding claims 3 and 4, Ruwisch teaches oxides of Ce, Nd, Sm, La, Pr, and/or mixtures thereof as suitable rare earth oxides. *See id.* at par. 42 and 48; Table 3; Ex. 1-7.

Regarding claim 5, Ruwisch teaches the inclusion of ~0.5 to ~10 wt. % La<sub>2</sub>O<sub>3</sub> and/or Pr<sub>2</sub>O<sub>3</sub> within its NO<sub>x</sub> storage material’s support composition. *See id.* at par. 49. While Ruwisch states that the La<sub>2</sub>O<sub>3</sub> and/or Pr<sub>2</sub>O<sub>3</sub> are doped upon a Ce/Zr mixed oxide support material, given Ruwisch's statement/suggestion of the interchangeability of Ce/Zr mixed oxides with Mg/Al mixed oxides as the NO<sub>x</sub> storage material's support (*see id.* at par. 48), one of ordinary skill in

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the art at the time of the invention could have reasonably concluded that the ~0.5 to ~10 wt. %  $\text{La}_2\text{O}_3$  and/or  $\text{Pr}_2\text{O}_3$  dopant would likewise have been appropriate for an Mg/Al mixed oxide serving as the  $\text{NO}_x$  storage component's support. Additionally or alternatively, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply a ~0.5 to ~10 wt. %  $\text{La}_2\text{O}_3$  and/or  $\text{Pr}_2\text{O}_3$  dopant to an Mg/Al mixed oxide serving as the  $\text{NO}_x$  storage component's support, given Ruwisch's statement/suggestion of the interchangeability of Ce/Zr mixed oxides with Mg/Al mixed oxides as the  $\text{NO}_x$  storage material's support.

Regarding claim 8, Ruwisch teaches the optional presence of Pd along with the Pt coating previously discussed. *See id.* at par. 43-44; Table 3; Ex. 2 and 4-7.

Regarding claims 9 and 10, Ruwisch teaches the optional presence of Rh-coated alumina within its  $\text{NO}_x$  storage catalyst. *See id.* at par. 45; Table 3; Ex. 3-7.

Regarding claim 16, Deeba suggests a  $\text{NO}_x$  storage component comprising BaO and a catalytically active component comprising Pt, wherein bulk ceria is employed, i.e. ceria being present in conjunction with both the first and second support materials. *See Deeba* at, e.g., col. 3, ln. 35-44 and 51-58, col. 4, ln. 6-14. Deeba further teaches the suitability of employing ceria with a) its Pt and optional additional Pt-group metal catalyst, and b) its  $\text{NO}_x$  storage component. *See id.* at col. 3, ln. 43-44 and 51-58, col. 6, ln. 35-41 and col. 9, ln. 1-13. Given the foregoing, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ an overall catalyst composition wherein its 1<sup>st</sup> support material (i.e., containing the Pt component and other optional Pt-group metals) comprises ceria and its 2<sup>nd</sup> support material (i.e., containing the  $\text{NO}_x$  storage material) comprises ceria and BaO. *Accord, Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 335, 65 USPQ 297, 301 (1945) ("Reading a list and

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selecting a known compound to meet known requirements is no more ingenious than selecting the last piece to put in the last opening in a jig-saw puzzle.”); MPEP 2144.07.

12. Claims 1-5, 8-10, 13, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruwisch in view of Deeba (collectively, “R/D”), further in view of Strehlau. Regarding claims 1-5, 8-10 and 16, R/D’s collective teachings are as above. Regarding claims 13 and 15, the difference between the claims and R/D is that the latter does not explicitly teach the presence of its NO<sub>x</sub> storage material in a 3-25 (as in claim 15) or 5-10 wt. % range (as in claim 13). These limitations, however, are taught by Strehlau.

Strehlau teaches a NO<sub>x</sub> storage catalyst comprising a K, Cs, Ba, Mg, Ca, or Sr oxide, carbonate, or hydroxide NO<sub>x</sub> storage material upon a rare earth metal-doped or bi-metallic support, similar to Ruwisch’s NO<sub>x</sub> storage catalyst. *See* Strehlau at col. 4, ln. 55 to col. 5, ln. 26. Strehlau teaches the desirability of employing a NO<sub>x</sub> storage material in amounts of 10-45 wt. % in relation to the NO<sub>x</sub> storage catalyst’s overall weight. *See id.* at col. 5, ln. 60-63. Given Strehlau’s statement of the effectiveness of employing 10-45 wt. % NO<sub>x</sub> storage material, and the fact that said range touches and/or overlaps those claimed, the latter are rendered *prima facie* obvious thereby as it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ such amounts of NO<sub>x</sub> storage material as taught by Strehlau within R/D’s overall catalyst. *In re Wertheim*; MPEP § 2144.05.

### ***Response to Arguments***

13. Applicant’s 8/20/10 arguments have been fully considered but they are not persuasive. Applicant’s arguments can be divided into three categories: a) that the cited prior art does not teach or suggest the claims as contemporaneously amended, b) that the cited prior art teaches away from the claimed catalyst composition, and c) that the cited prior art “does not make

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obvious the unexpected thermal durability that the inventors discovered[.]” These arguments will be dealt with in turn below.

Regarding a), the cited prior art does indeed teach or suggest the amended claim limitations, as described above.

Regarding b), applicant’s assertion of a teaching-away within Ruwisch and citations to Table 3 (catalyst CC2 therein) and par. 81 therein would not be dispositive even if true. Catalyst CC2 and par. 81’s discussion thereof merely represents an isolated example within Ruwisch’s overall disclosure. Ruwisch’s entire disclosure is not directed toward catalyst CC2; applicant’s focusing on said catalyst ignores the bulk of Ruwisch’s teachings. Even still, applicant’s argument that catalyst CC2 possesses inferior NO<sub>x</sub> storage efficiency is severely undercut by Ruwisch's teaching and/or suggestion of adding BaO thereto to achieve "a significant improvement of the NO<sub>x</sub> storage efficiency” and “a synergistic improvement of the [NO<sub>x</sub>] storage capacity of the catalyst[.]” *See id.* at par. 38 and 42. Thus, Ruwisch does indeed teach the advantage of catalysts possessing the claimed components.

This statement also lends sufficient motivation to render selecting and employing homogeneous Mg/Al oxide as a NO<sub>x</sub> storage component (i.e., second support material) as *prima facie* obvious. In response to applicant's argument that unexpectedly increased thermal durability was achieved by employing homogeneous Mg/Al oxide as its first support material (for, e.g., Pt) and its second support material (for the NO<sub>x</sub> storage component), the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. *See Ex parte Obiaya*, 227 USPQ 58, 60 (BPAI 1985). In other words, the

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Examiner's motivational rationale for selecting Mg/Al oxide as the NO<sub>x</sub> storage component's support material need not be the same as selected or discovered by applicant.

Regarding c), as a threshold matter, applicant's argument that Ruwisch does not make obvious the asserted unexpected thermal durability enhancements within the claimed invention is not commensurate with the claims' scope, as said durability is not claimed. Features from the specification are not read into the claims. *See E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1369, 67 USPQ2d 1947, 1950 (Fed. Cir. 2003) (claims must be interpreted "in view of the specification" without importing limitations from the specification into the claims unnecessarily); MPEP 2106 II.C.

Further, given the obviousness of employing homogeneous Mg/Al oxide as both the first and second support materials as stated above, the improved thermal durability would have been an obvious and/or inherent property of the resulting catalyst. This conclusion of obviousness and/or inherency is buttressed by the Federal Circuit's holding that "[w]hen a chemical composition is claimed, a *prima facie* case of obviousness under Section 103 may be established by [the prior art's teaching of] a similar composition, the presumption being that similar compositions have similar properties." *See, e.g., In re Soni*, 54 F.3d 746, 34 USPQ2d 1684, 1687 (Fed. Cir. 1995) (internal citations omitted); *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985); MPEP 2112.01 (inherency).

Lastly, applicant's asserted unexpected results are indeed already clearly predicted by Ruwisch, which states that Mg/Al mixed oxides possess improved thermal durability as compared to  $\gamma$ -Al<sub>2</sub>O<sub>3</sub>, and that even further thermal durability can be achieved by impregnating the mixed oxide with rare earth oxides, i.e. of Ce and/or Pr. *See* Ruwisch at par. 39 and 42.

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14. Applicant's amendments have overcome the non-statutory obviousness-type provisional double patenting rejections over copending App. No. 12/444,304. Said rejections are withdrawn.

***Conclusion***

15. Applicant's amendment necessitated the/any new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL BERNIS whose telephone number is (571)270-5839. The examiner can normally be reached on Monday thru Thursday, 9AM-6PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emily Le can be reached at (571)272-0903. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. B./ October 21, 2010  
Examiner, Art Unit 1734

/EMILY M LE/  
Supervisory Patent Examiner  
Art Unit 1734